

Appl. No. 10/533,691
Reply to Office Action of March 25, 2008
Amendment dated: May 16, 2008

REMARKS

A Request for Continued Examination has been included with this response.

Accordingly, Applicants request the withdrawal of the finality of the last Office Action and request further consideration of the attached amended and new claims on the merits.

New claims 7 - 14 have been added in order to alternately define the invention as disclosed in the specification.

Without conceding the propriety of the Examiner's position, and solely to expedite prosecution, claims 2 and 5 have been cancelled without prejudice or disclaimer.

Applicants respectfully request reconsideration of the prior art rejections set forth by the Examiner under 35 U.S.C. sections 102 and 103. Applicants respectfully submit that the prior art references of record, whether considered alone, or in combination, fail to either teach or suggest Applicants' presently claimed invention.

More specifically, Applicants' presently claimed invention is directed to an ink jet printing system capable of delivering ink in a straight perpendicular direction or in an angled direction, and wherein the energy delivered to one of the ink jet elements when printing at an angled direction is delivered with a delay of 7.5% to 20% of the supply time with respect to the supply timing of a reference energy signal so as to desirably alter the discharge angle of the droplet discharge from the nozzle of the ink jet printing device without causing undesired artifacts due to depositions outside this angle range. Applicants respectfully submit that the prior art references cited by the Examiner provide no teaching or suggestion whatsoever regarding this advance in the art.

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Significantly, the Examiner has failed to identify any specific disclosure, teaching, or suggestion in the art of record that in an angled ink drop ejection mode, the angle of ejection is limited by supplying an energy to one of a pair of discharge elements at a delay of 7.5% to 20% relative to an energy to another of a pair of discharge elements. As noted on pages 53 to 54 of the disclosure, driving signals outside of this range result in imbalances of ink expansion, undesired contact of the ink with edges of the discharge nozzle, and a resulting unevenness of impact points of ink droplets and undesirably low print quality.

The Examiner states on page 3 of the last Office Action that Kazuyuki is “aimed at solv[ing] the same problem by the same means.” Applicants respectfully disagree. Kazuyuki is directed to a method of applying random ejection directions during printing in order to eliminate streaks and spots.

Applicant’s invention, on the other hand, is directed to a method of controlled angular depositions (not random) via a newly discovered supply drive method not disclosed by the art of record that prevents imbalances of ink expansion and undesired contact of ink with edges of the discharge nozzle, and therefore renders unnecessary the technique of Kazuyuki of using random depositions to hide or cover up streaks and spots.

The Examiner also argues that because Kazuyuki discloses the use of a random number generator which alters the discharge times at random, “presumably, the reference would, at one point or another, arrive at a combination of heater pulses within the 20% threshold.”

First and foremost, Applicants submit that Kazuyuki disclose a 1-bit random number generator (See paragraphs [0067] – [0072]) that determines only whether the heater 4 is driven first or whether the heater 3 is driven first. Kazuyuki does not

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disclose any means capable of varying the amount of delay between the driving force of heater 4 and heater 3. Accordingly, for this reason alone, Applicants submit that the Examiner's argument fails.

Additionally, Applicants submit that the Examiner has improperly relied upon an inherency argument. "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." (Emphasis in original) *MEHL/Biophile Intern. Corp. v. Milgram*, 192 F.3d 1362, 1365 (Fed.Cir. 1999). Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates. *In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed.Cir.1986).

In this case, Applicants submit that the Examiner has failed to meet the evidentiary burden of showing that the Kazuyuki reference necessarily operates to anticipate the currently claimed invention.

Finally, the Examiner asserts on page 4 of the Office Action that one of ordinary skill in the art would have arrived at the claimed range through "routine experimentation." Applicants respectfully disagree.

Here, no reference discloses, teaches, or suggests that the amount of delay between the first driving signal and the second driving signal is a result determinative value in regard to the ability to prevent imbalances of ink expansion, undesired contact of the ink with edges of the discharge nozzle, and a resulting unevenness of impact points of ink droplets and undesirably low print quality (See pages 53 to 54 of the disclosure). The predecessor court to the Court of Appeals for the Federal Circuit has held that a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination

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of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618 (CCPA 1977). Applicants note that the *Kazuyuki* reference fails to identify the amount of delay between a drive signal applied to the heater 3 and the drive signal applied to the heater 4. In fact, *Kazuyuki* has failed to identify *any* ability to vary the amount of delay.

Accordingly, in light of the foregoing, Applicants respectfully submit that all claims now stand in condition for allowance as the Examiner has failed to provide the appropriate basis for rejecting the claims in the instant application.

Applicants therefore request reconsideration of the prior art rejections set forth by the Examiner in the instant application.

The Examiner's remaining references cited but not relied upon, considered either alone or in combination, also fail to teach applicant's currently claimed invention. In light of the foregoing, Applicants respectfully submit that all claims now stand in condition for allowance.

In the event that it is deemed necessary, the Commissioner is hereby authorized to charge any fees due or to credit any overpayment to Deposit Account No. 50-3891.

Respectfully submitted,

Date: 5/20/08

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